**Ceric Ammonium Nitrate (CAN) catalyzed synthesis and *α*-glucosidase activity of some novel tetrahydropyridine phosphonate derivatives**

**Kandula Madhu Kumar Reddya, Kotha Peddannab, Mavallur Varalakshmic, Nemallapudi Bakthavatchala Reddya,d, Gundala Sravyaa,d, Grigory V Zyryanov d,e, Cirandur Suresh Reddya\***

aDepartment of Chemistry, Sri Venkateswara University, Tirupati-517 502, Andhra Pradesh, India

bDepartment of Bio-Chemistry, Sri Venkateswara University, Tirupati-517 502, Andhra Pradesh, India

cDepartment of Humanities and Sciences, Sri Venkateswara College of Engineering and Technology, Chittoor-517 127, Andhra Pradesh, Indi

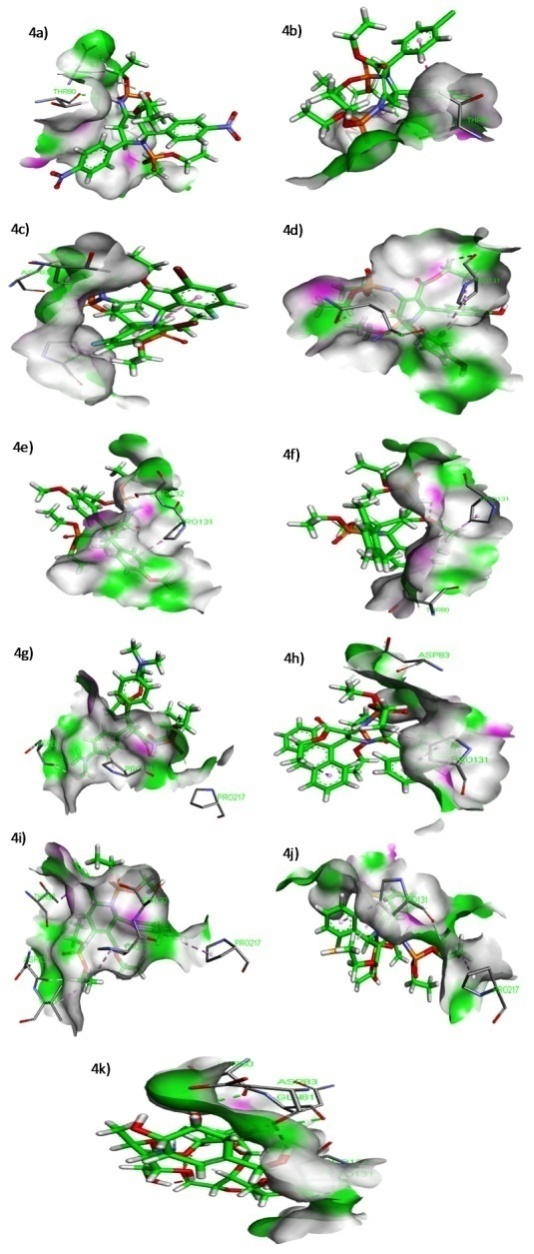
dDepartment of Organic and Biomolecular Chemistry, Chemical Engineering Institute, Ural Federal University, 19 Mira Street, 620002 Yekaterinburg, Russian Federation

eI. Ya. Postovskiy Institute of Organic Synthesis, Ural Division of the Russian Academy of Sciences, 22 S. Kovalevskoy Street, 620219 Yekaterinburg, Russian Federation

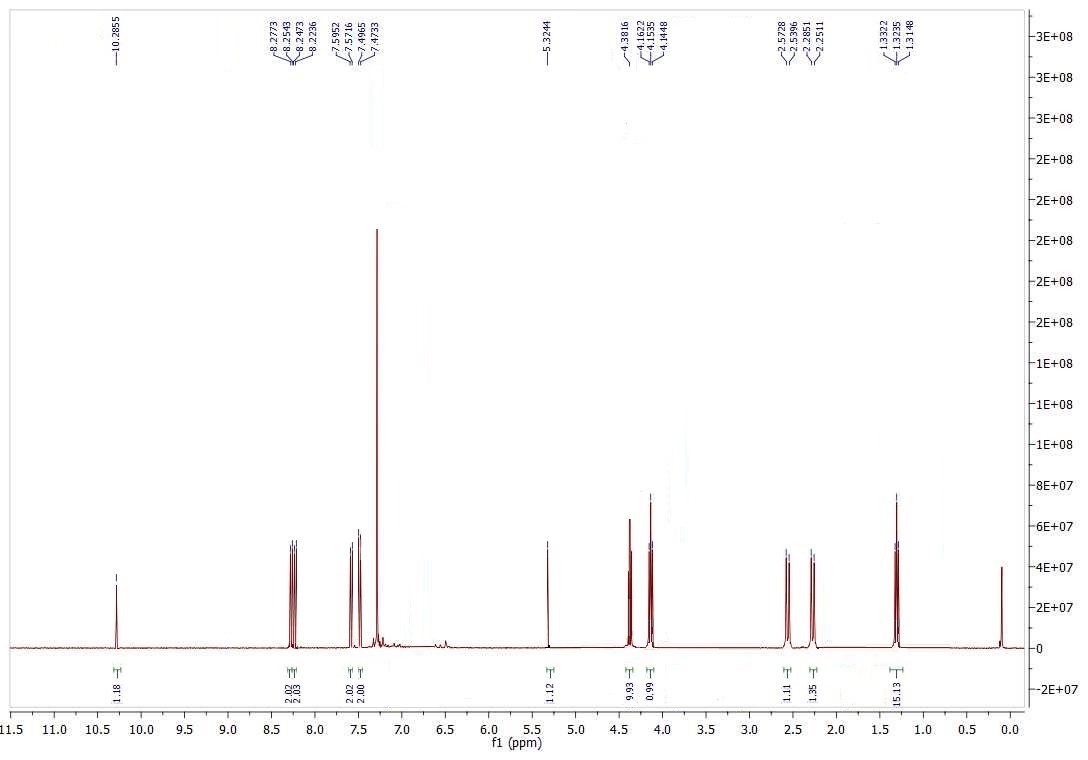
E-mail: [csrsvu@gmail.com](mailto:csrsvu@gmail.com)

**Supplemental Materials**

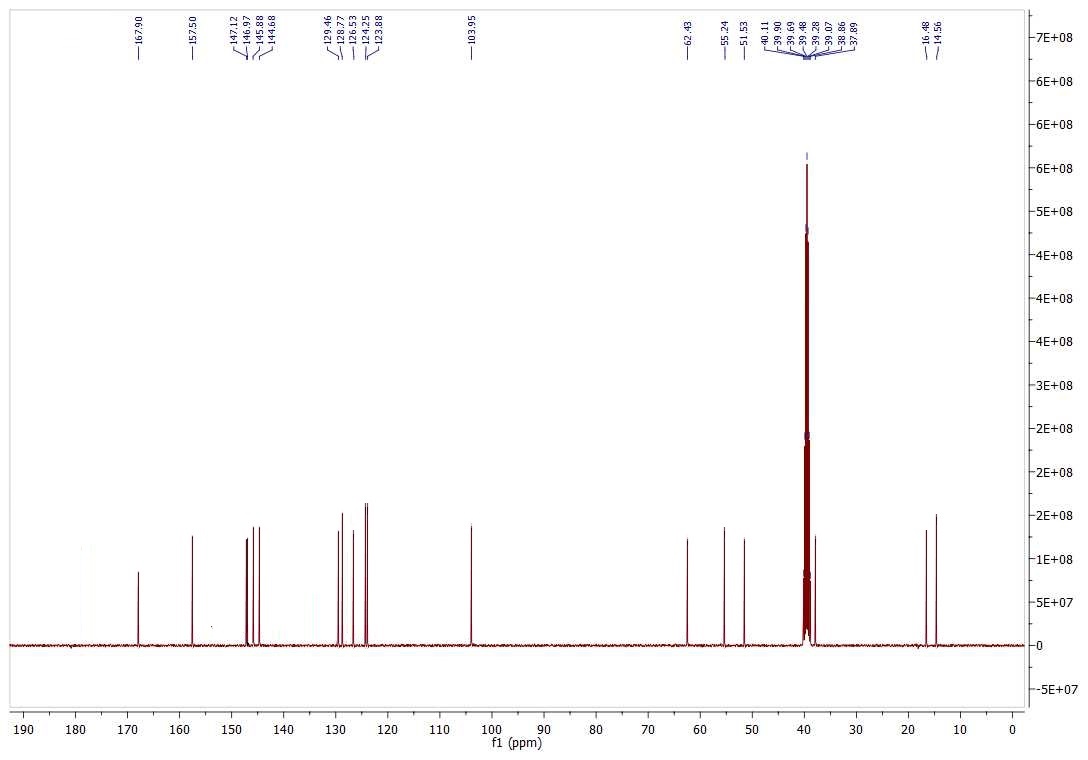
**Figure S 1: Recyclability of CAN catalyst**

****

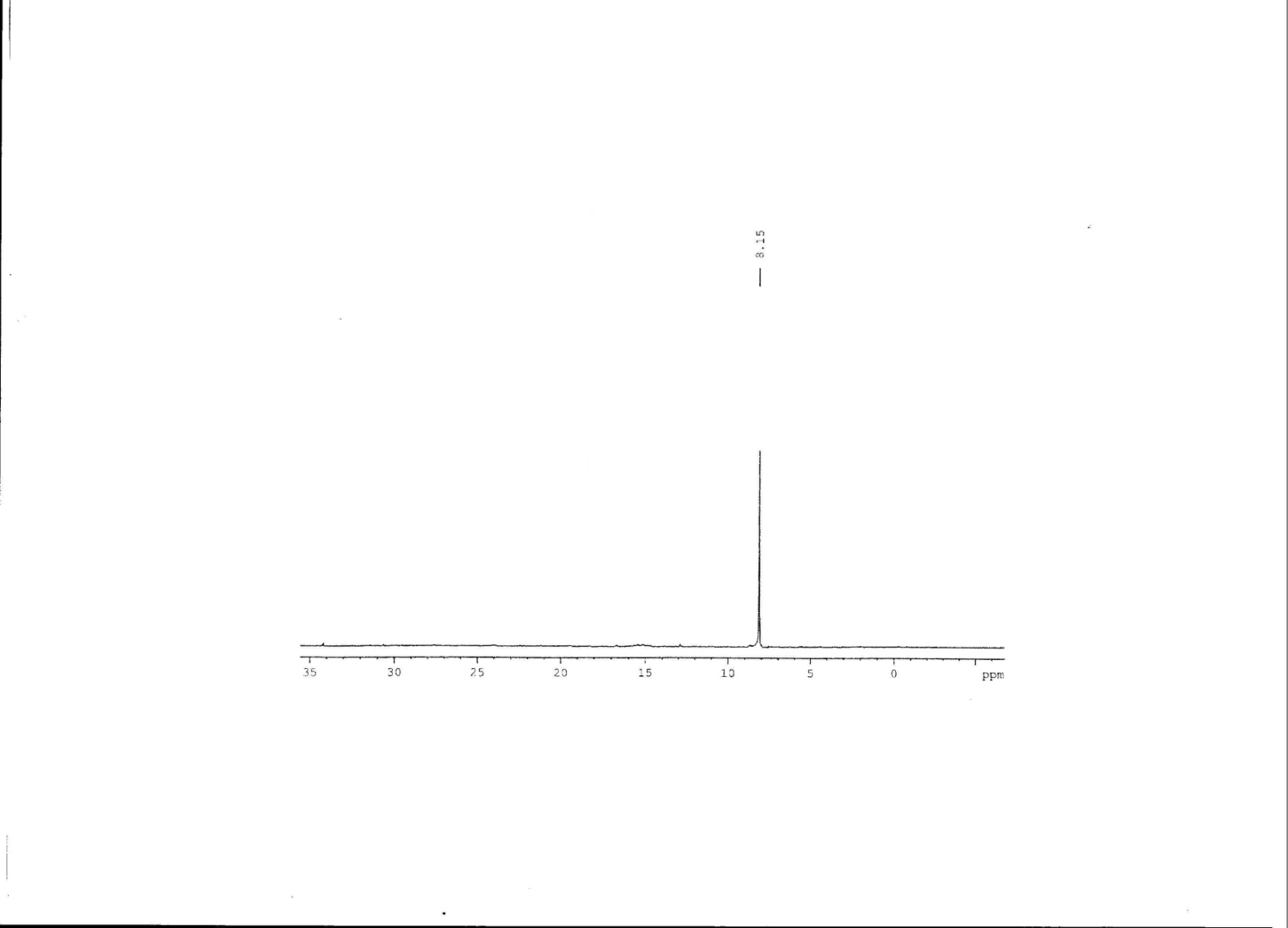
**Figure S 2: Molecular Docking Figures of 4a-j**

****

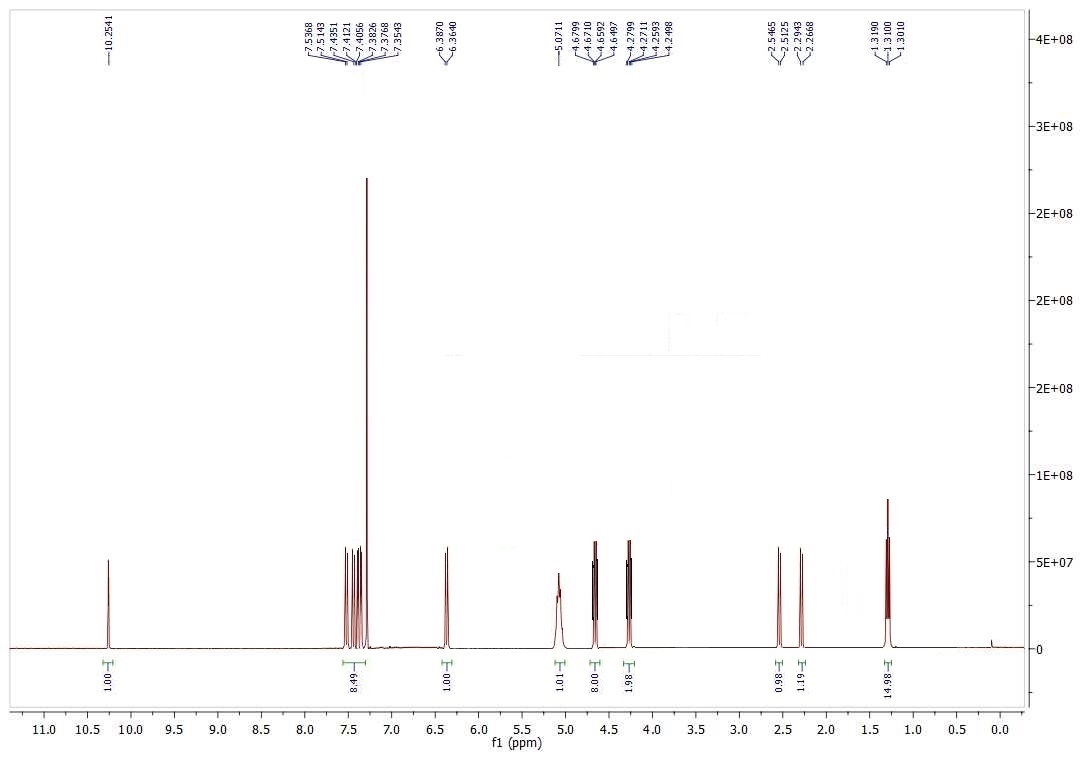
**Figure S 3: 1H - NMR Spectrum of compound 4a**



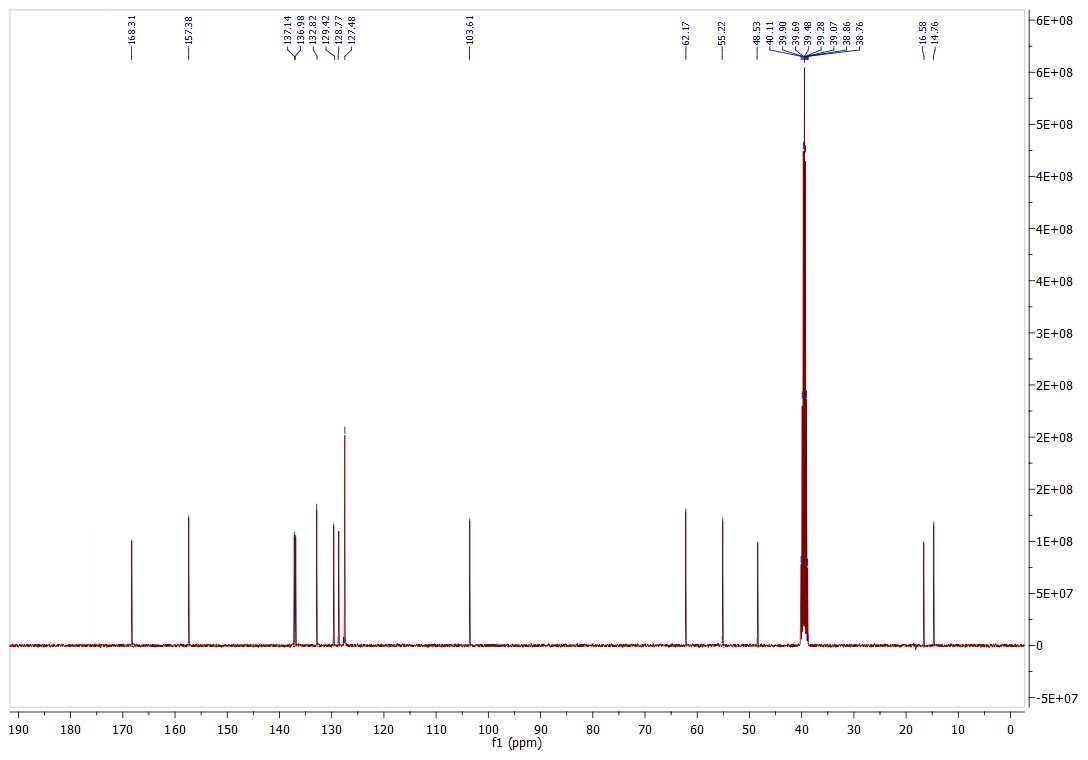
**Figure S 4: 13C - NMR Spectrum of compound 4a**

****

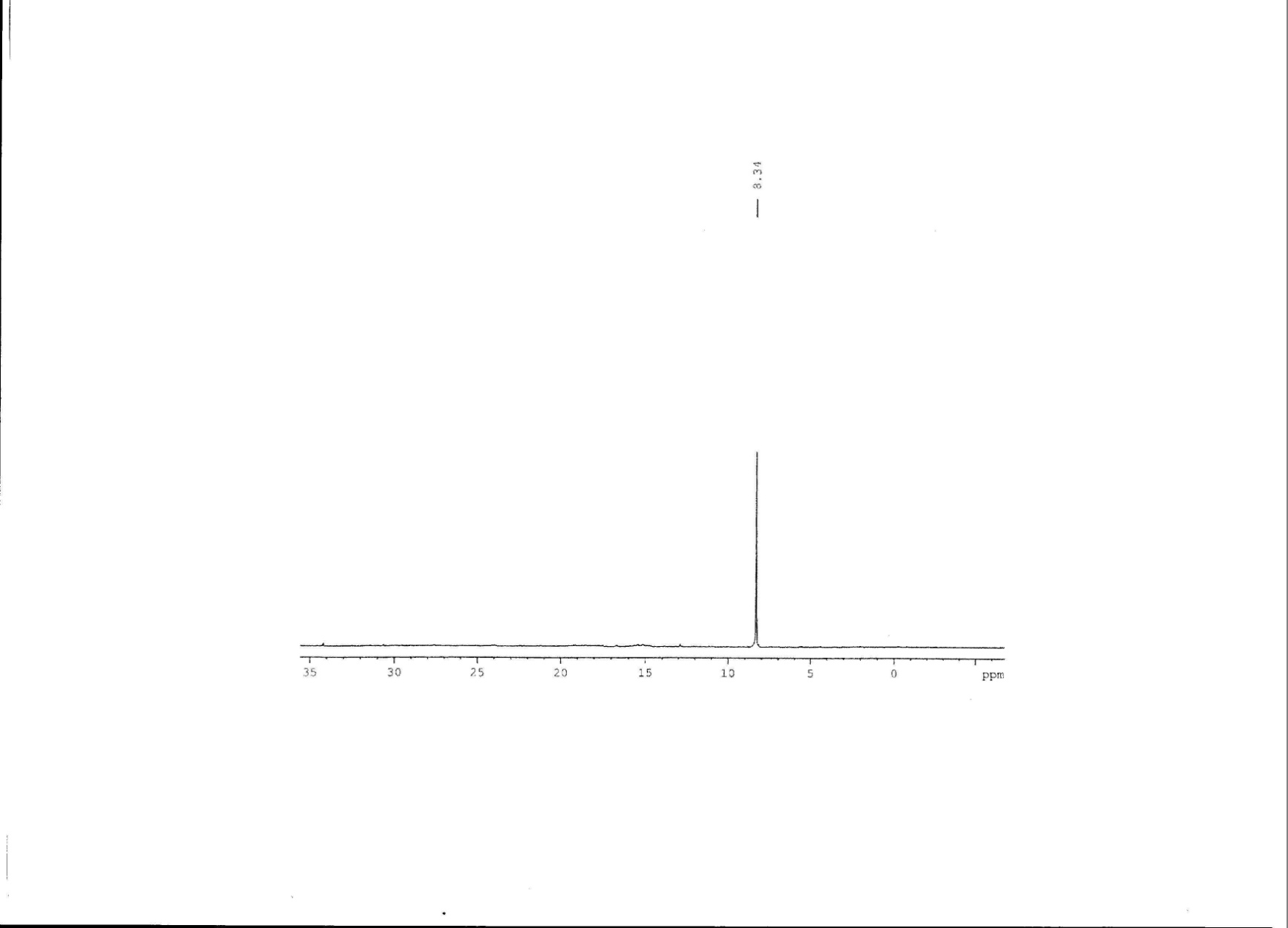
**Figure S 5: 31P - NMR Spectrum of compound 4a**

****

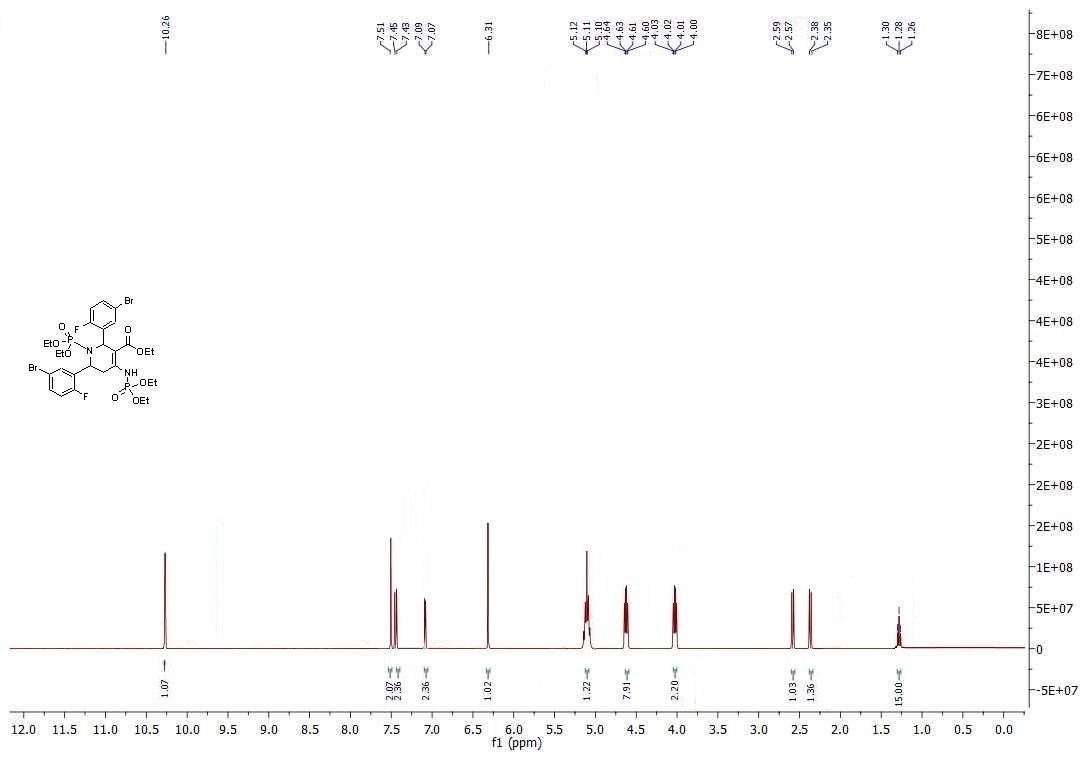
**Figure S 6: 1H - NMR Spectrum of compound 4b**

****

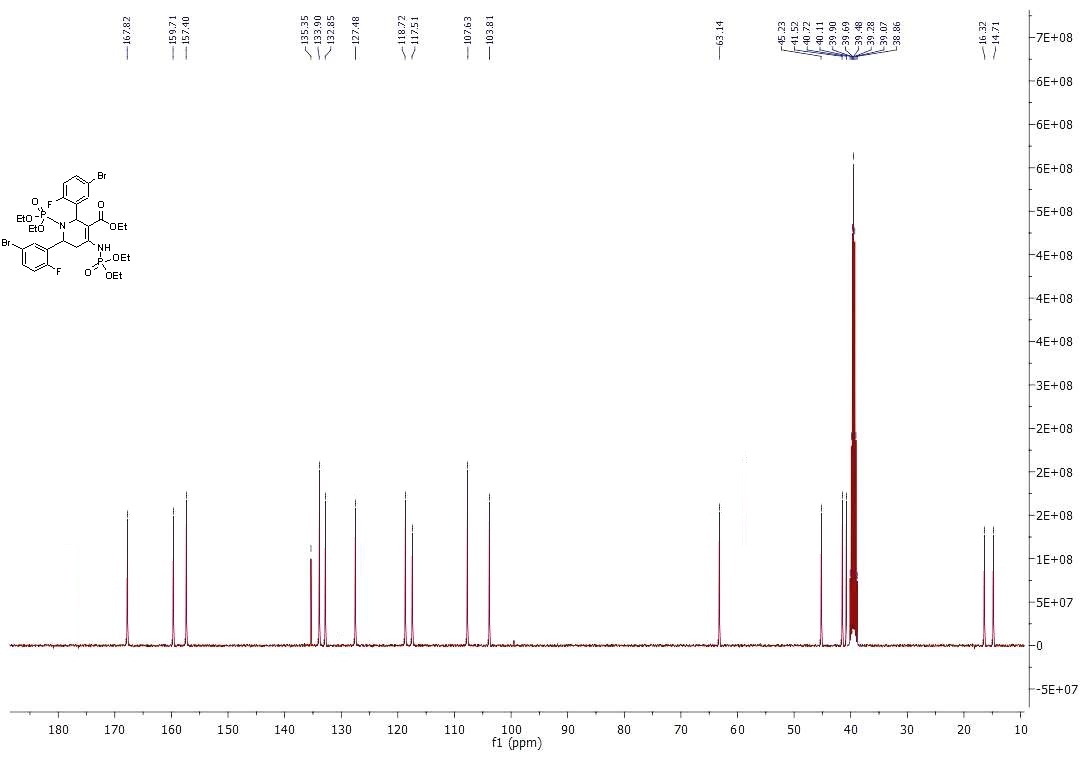
**Figure S 7: 13C - NMR Spectrum of compound 4b**

****

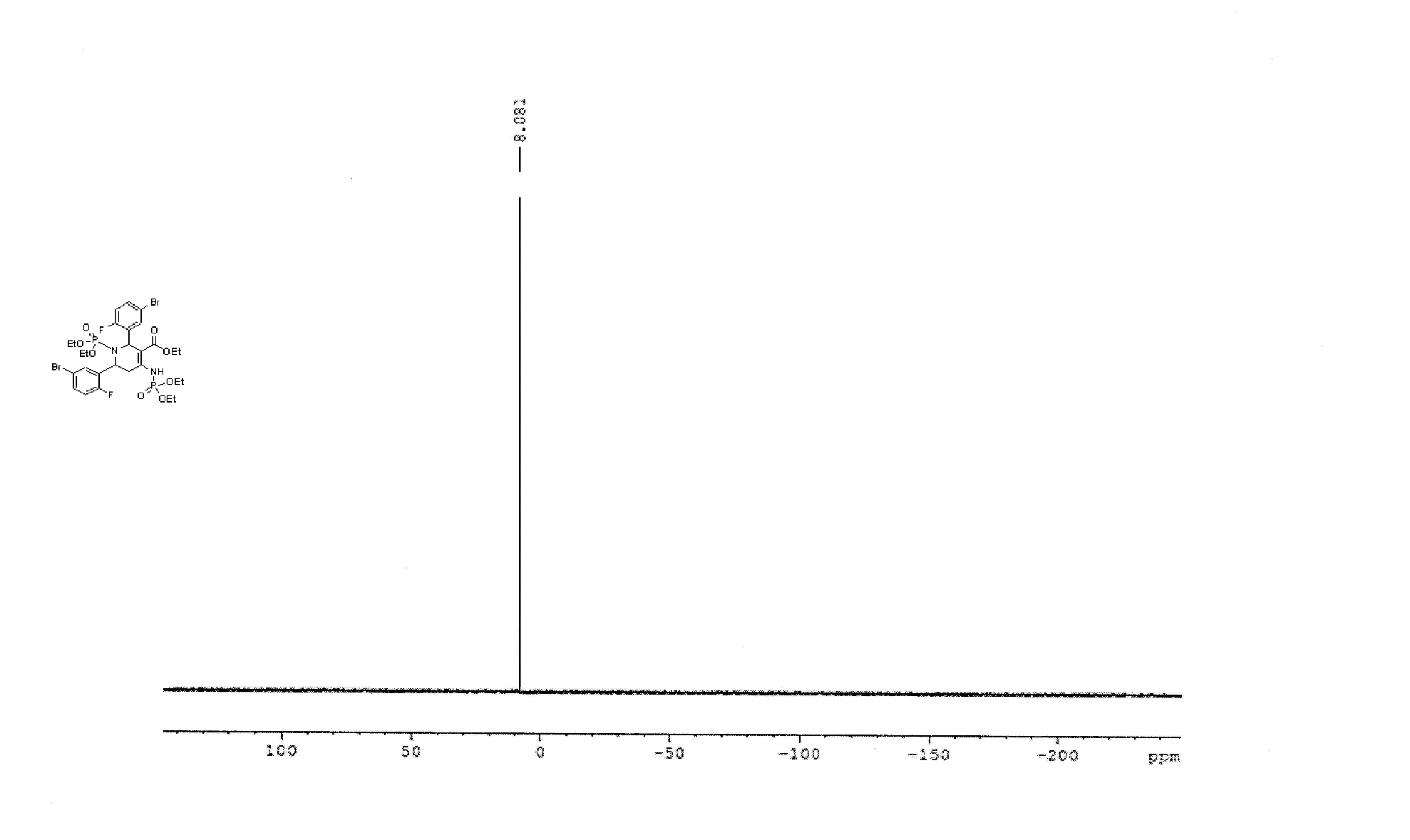
**Figure S 8: 31P - NMR Spectrum of compound 4b**

****

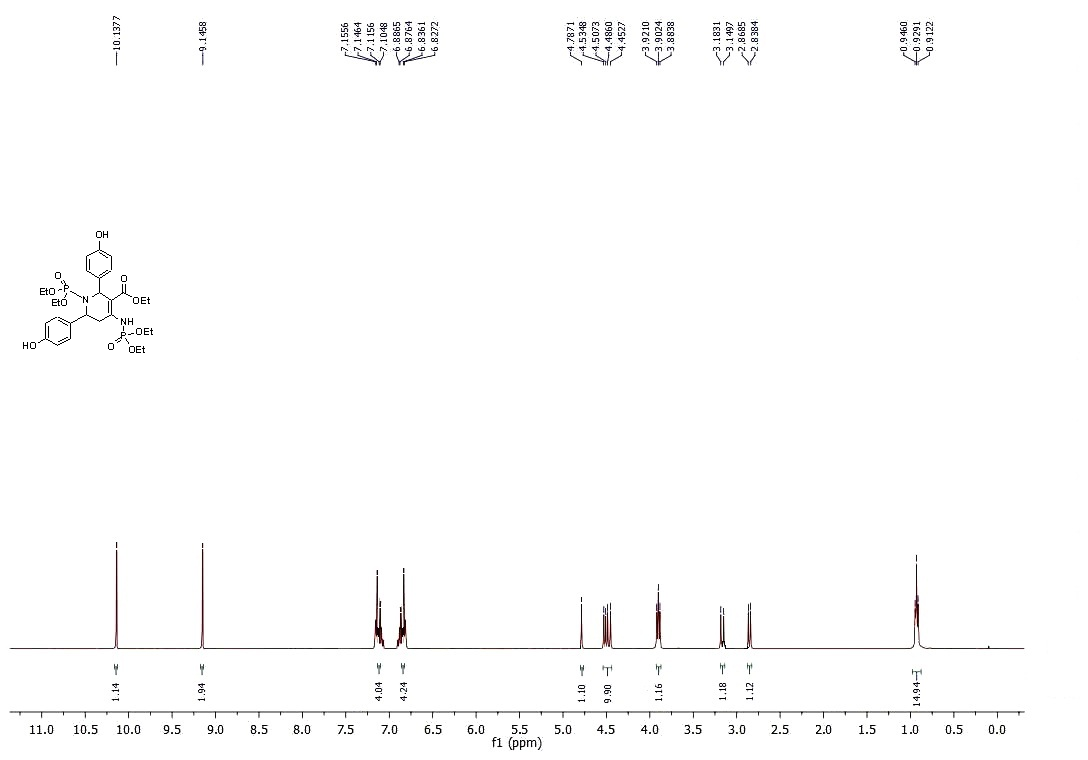
**Figure S 9: 1H - NMR Spectrum of compound 4c**

****

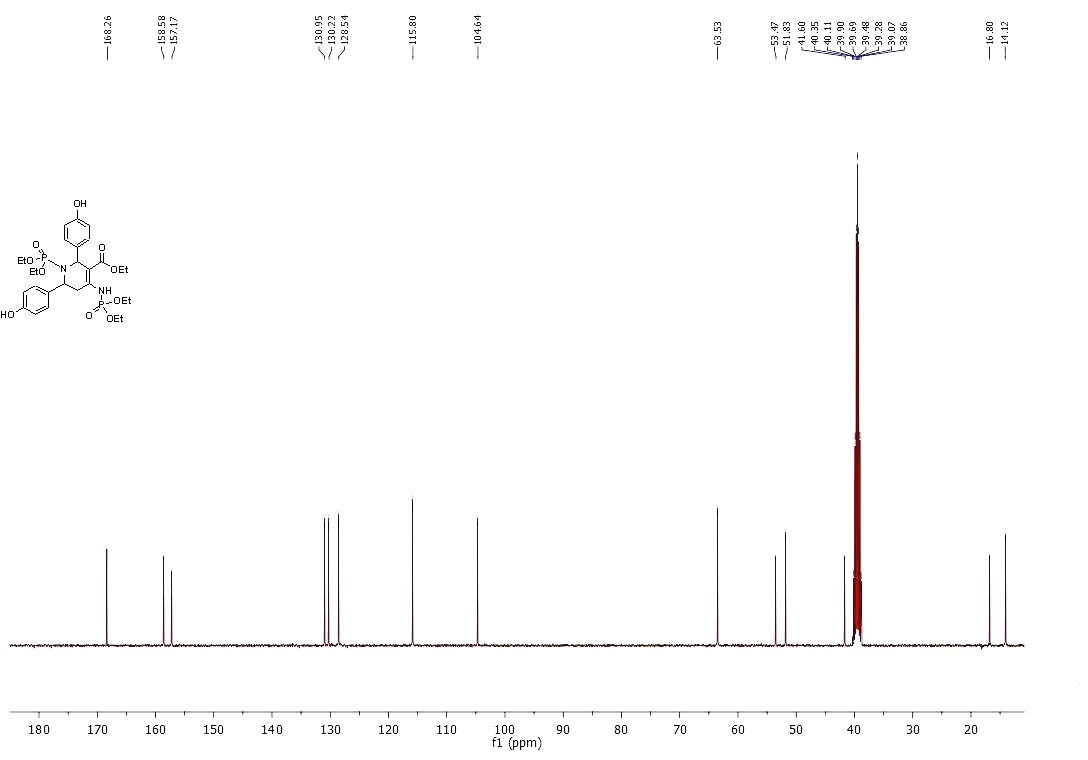
**Figure S 10: 13C - NMR Spectrum of compound 4c**

****

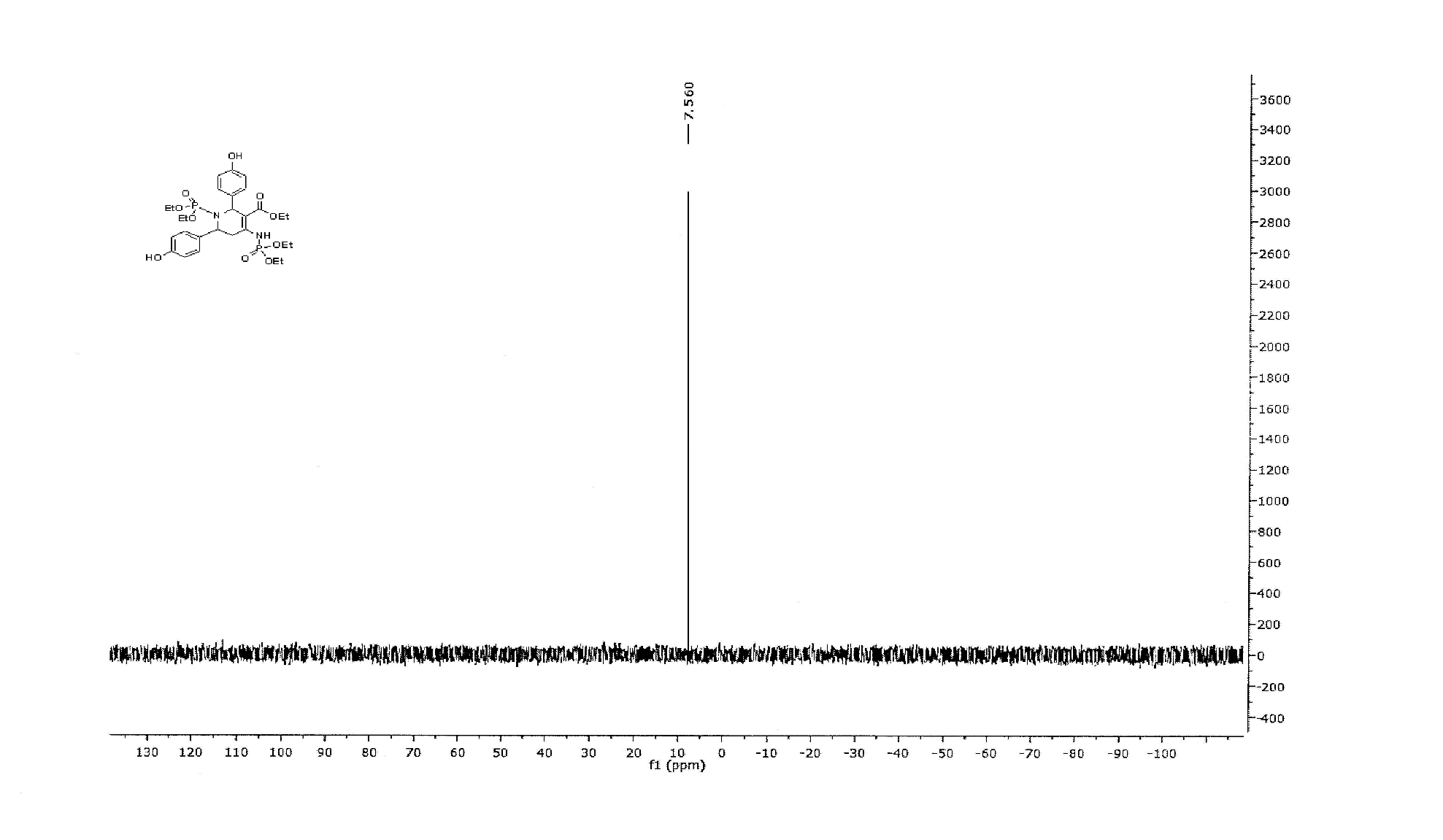
**Figure S 11: 31P - NMR Spectrum of compound 4c**

****

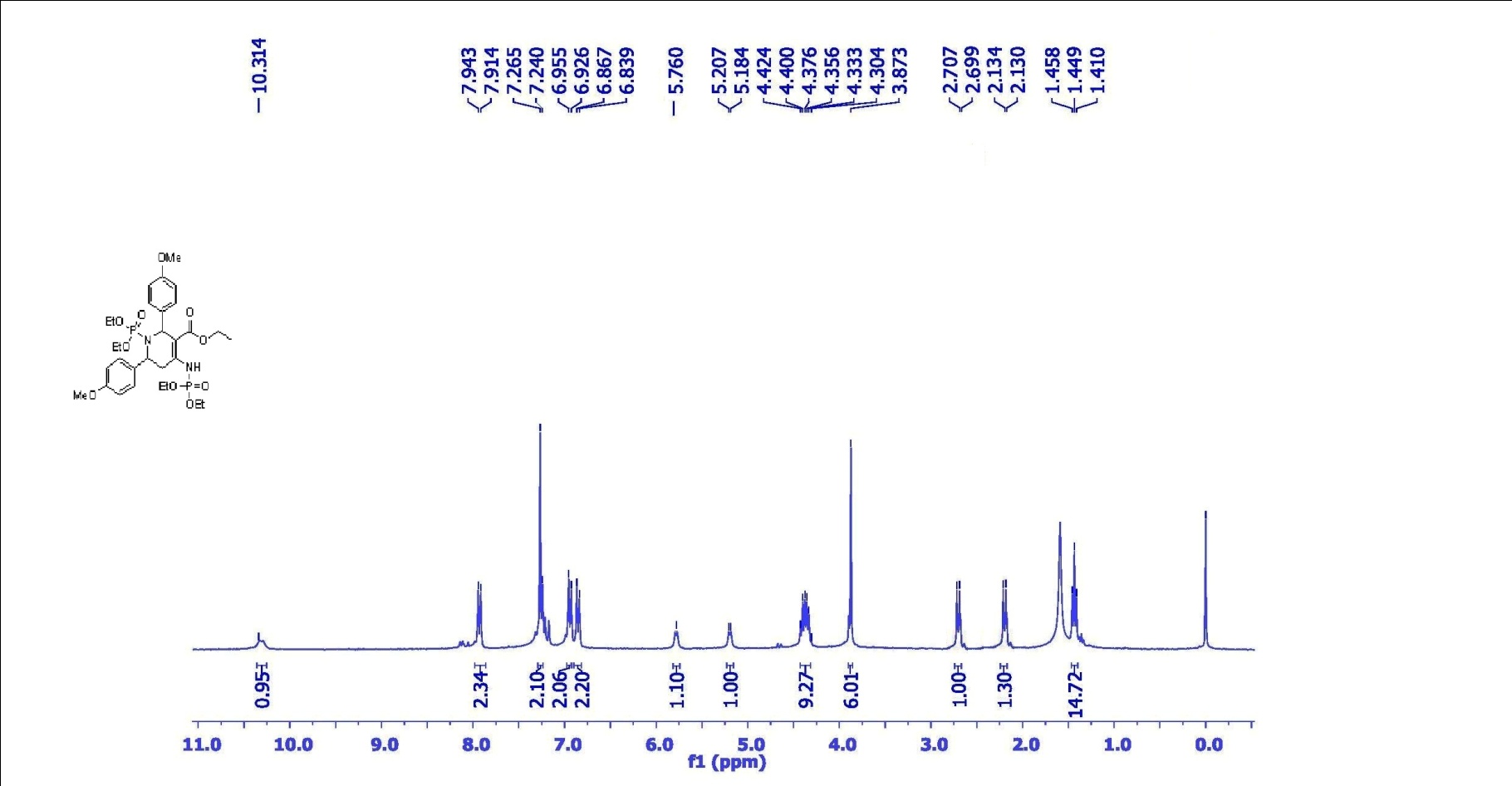
**Figure S 12: 1H - NMR Spectrum of compound 4d**

****

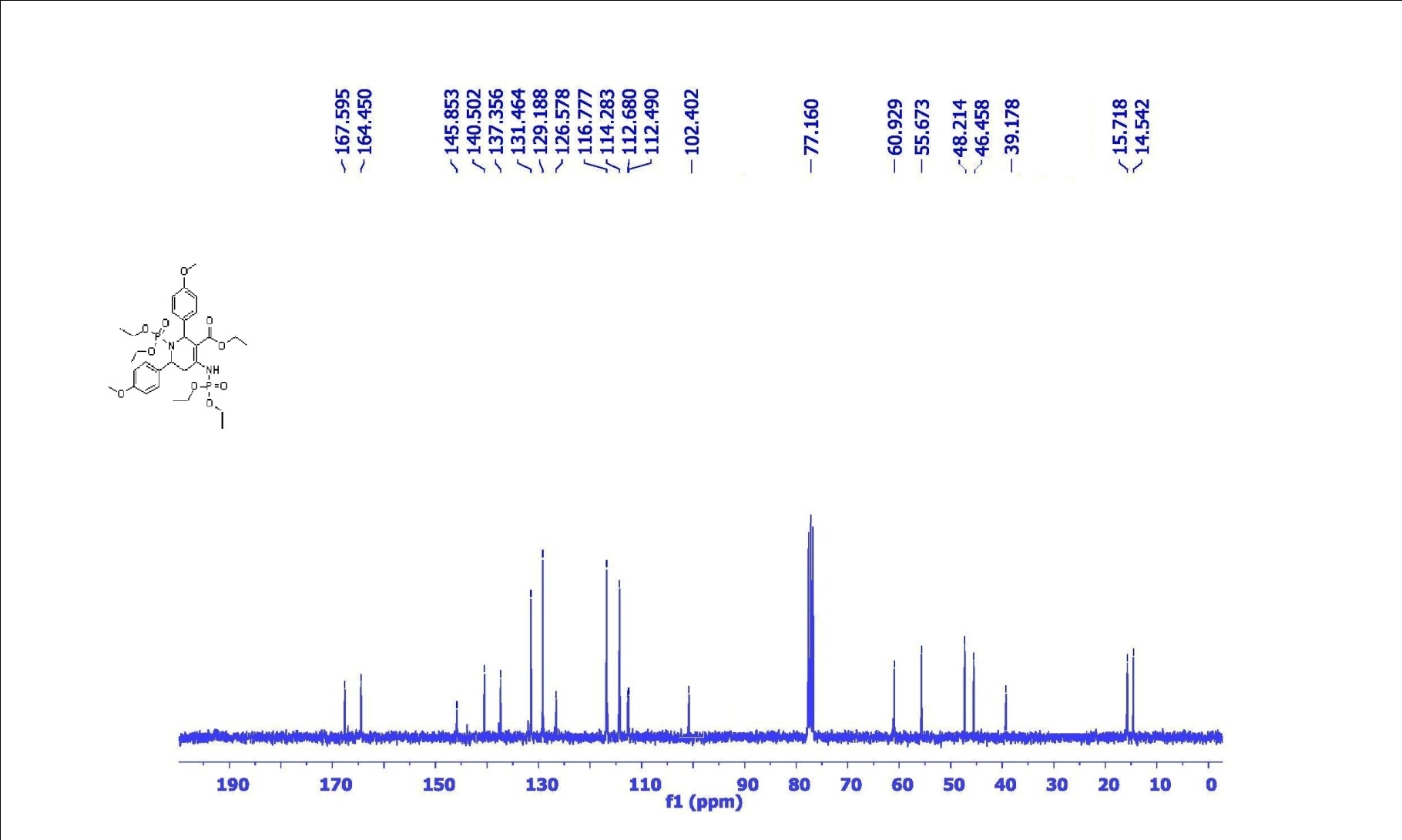
**Figure S 13: 13C - NMR Spectrum of compound 4d**



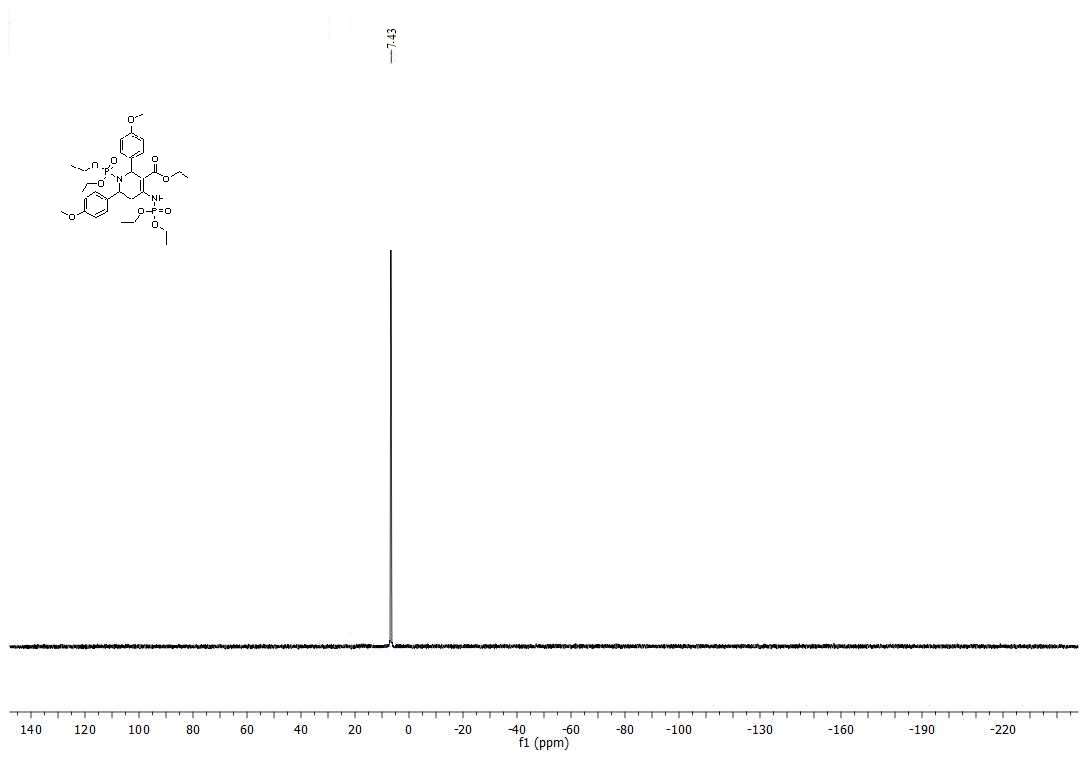
**Figure S 14: 31P - NMR Spectrum of compound 4d**

****

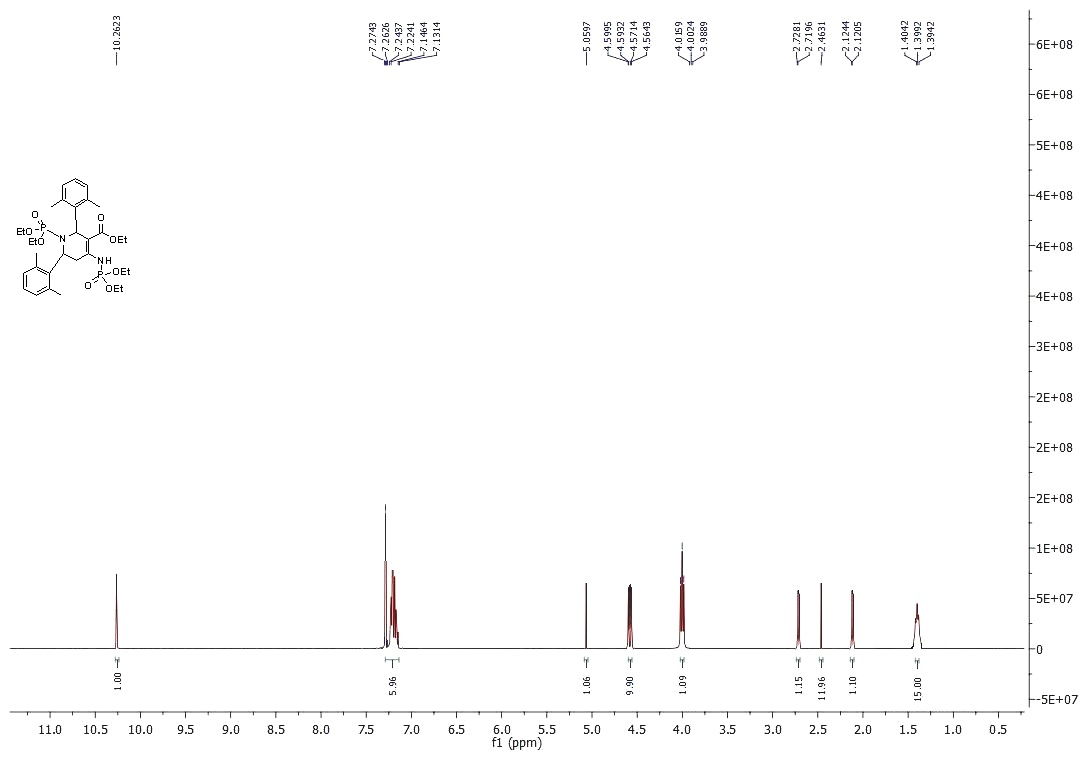
**Figure S 15: 1H - NMR Spectrum of compound 4e**

****

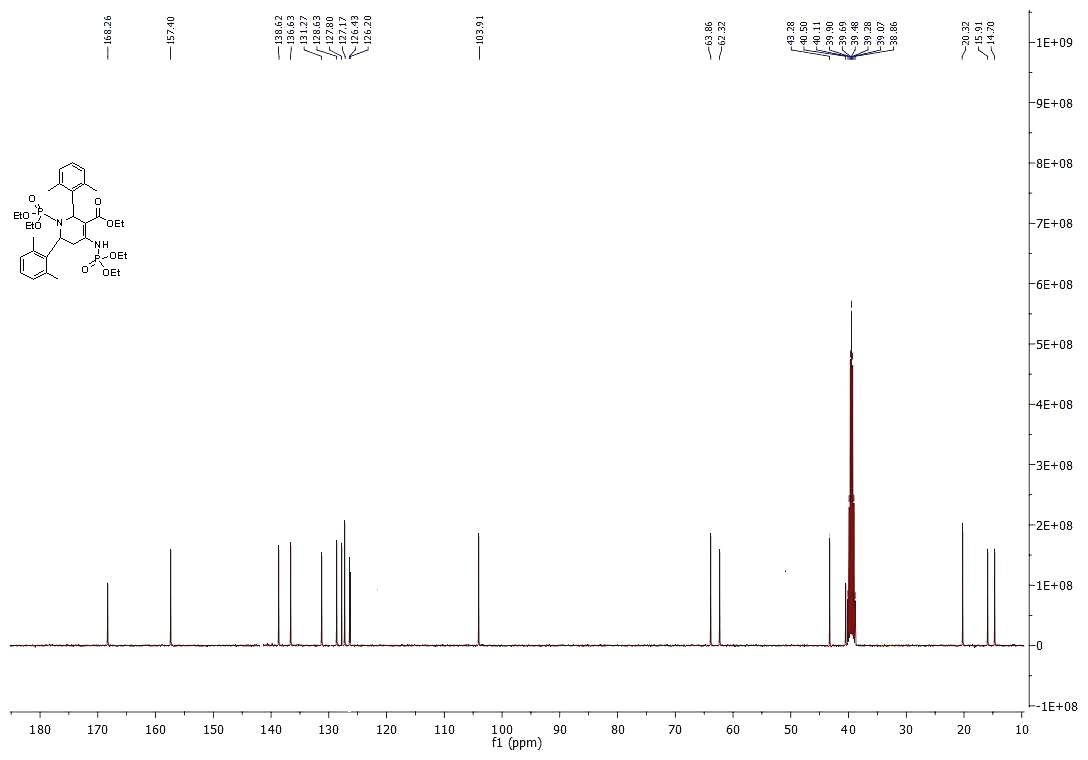
**Figure S 16: 13C - NMR Spectrum of compound 4e**

****

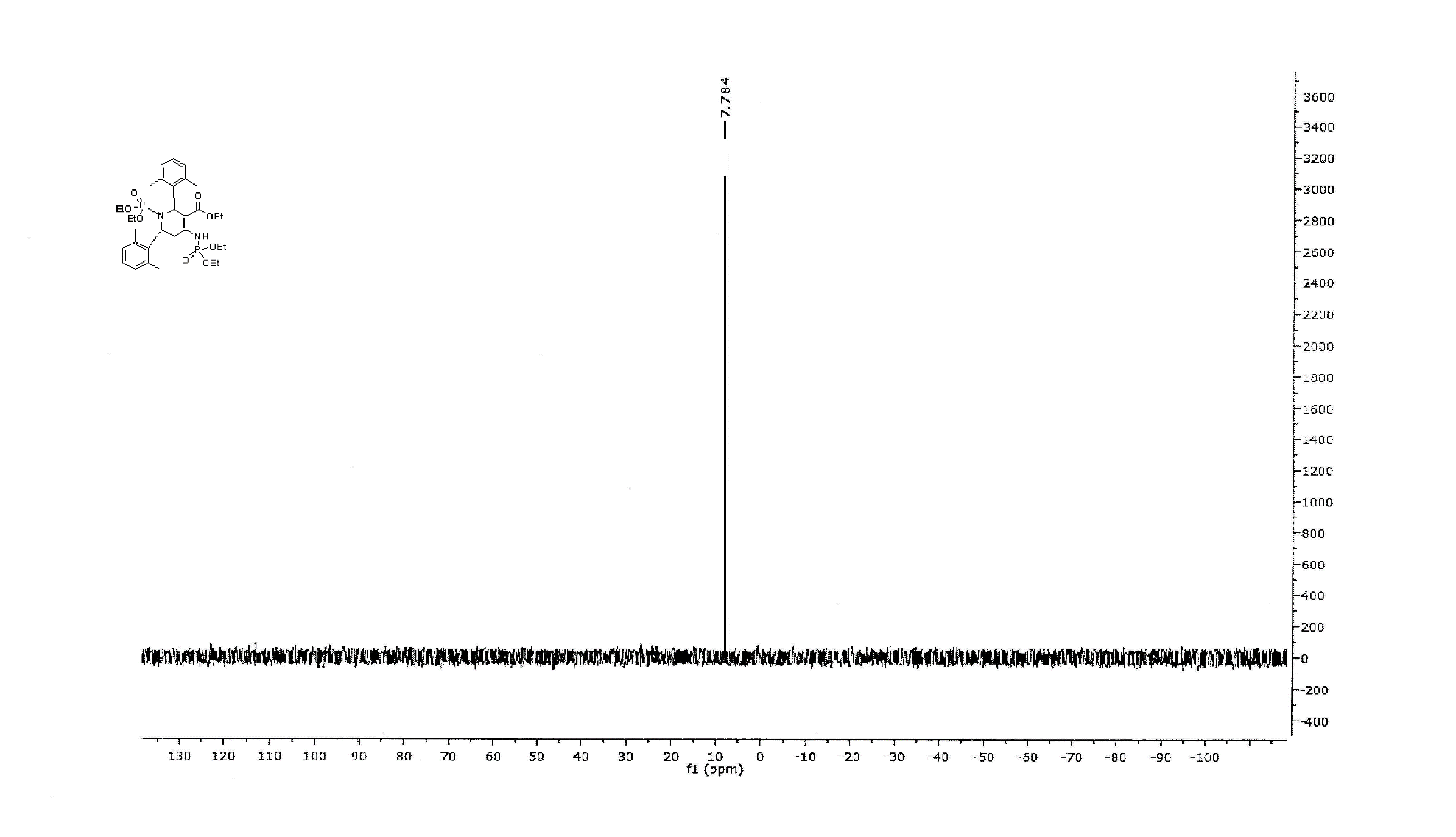
**Figure S 17: 31P - NMR Spectrum of compound 4e**

****

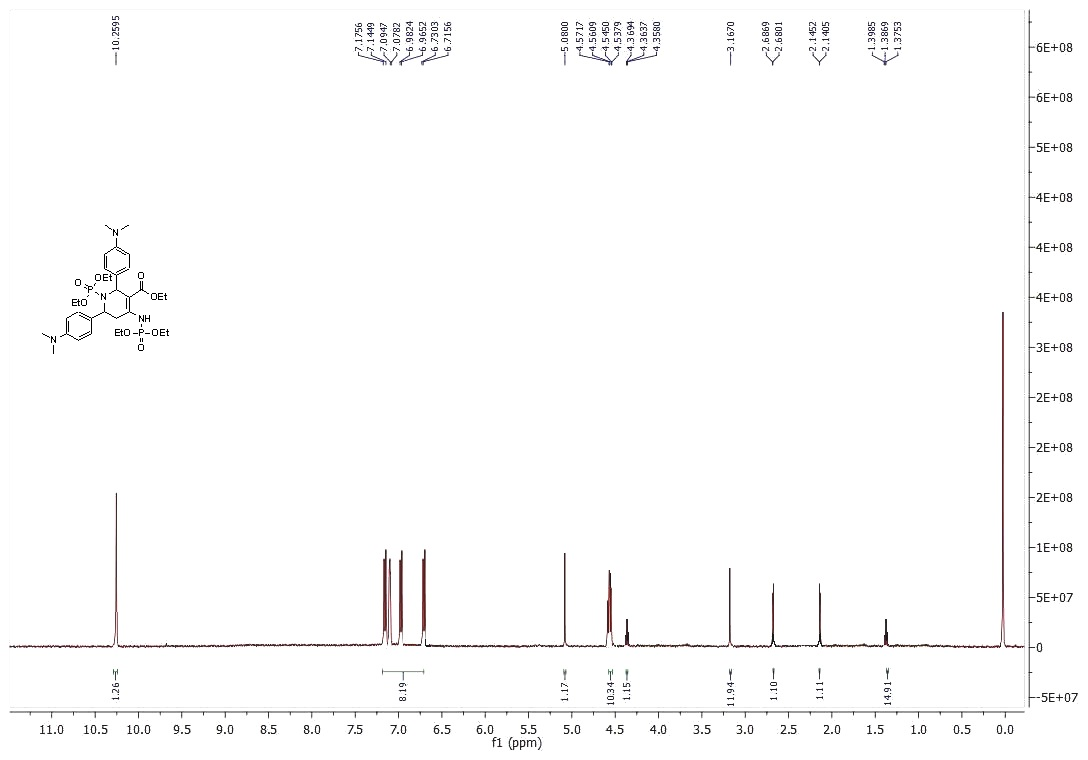
**Figure S 18: 1H - NMR Spectrum of compound 4f**

****

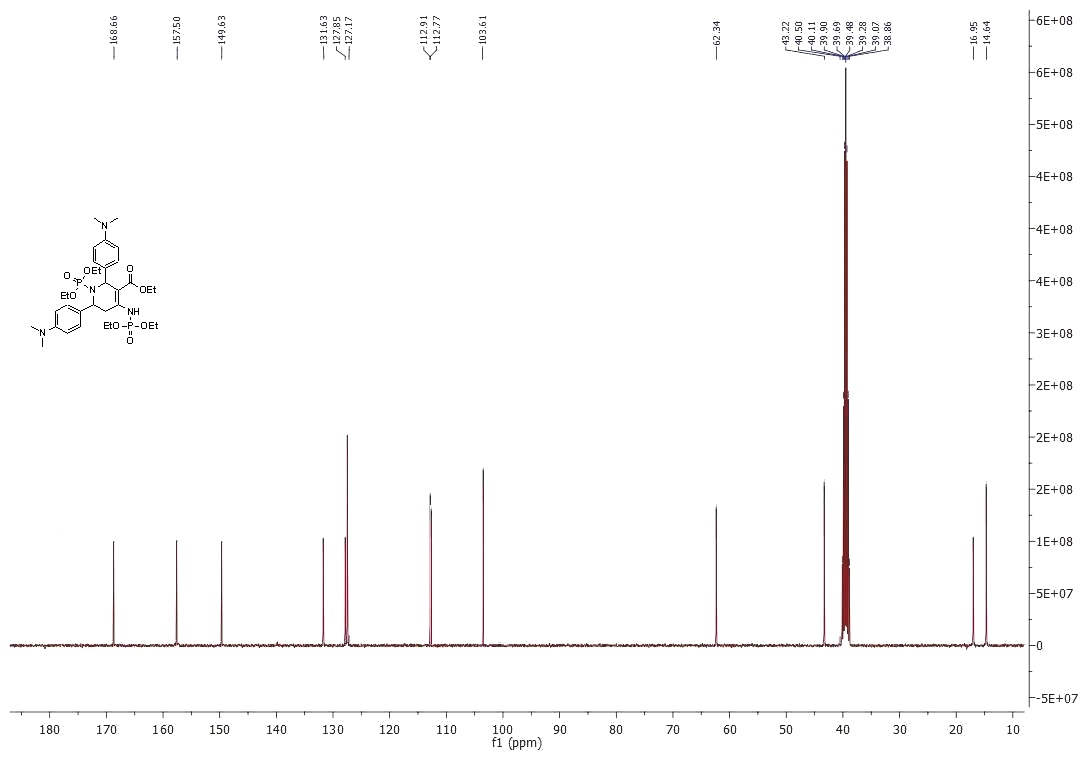
**Figure S 19: 13C - NMR Spectrum of compound 4f**

****

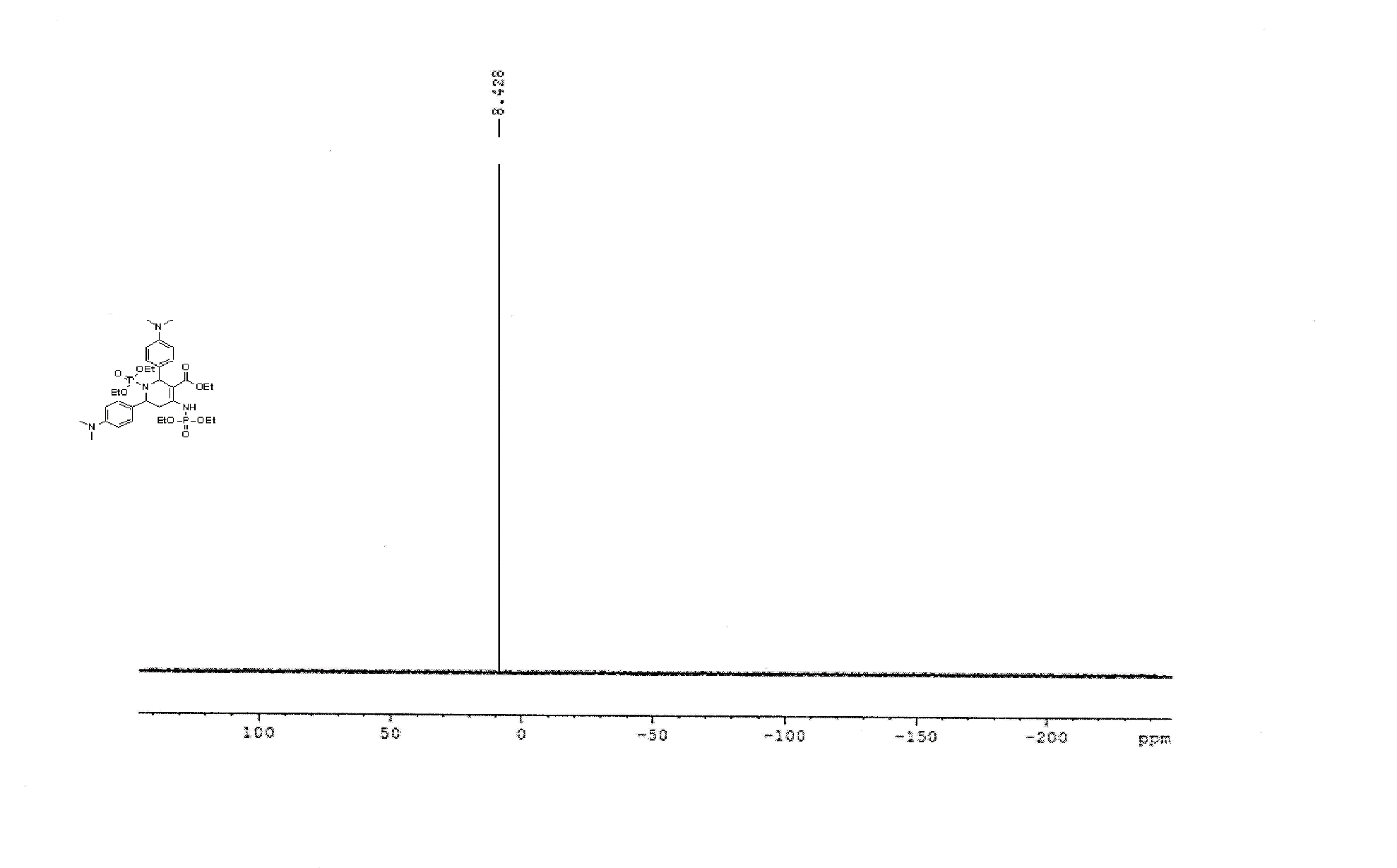
**Figure S 20: 31P - NMR Spectrum of compound 4f**

****

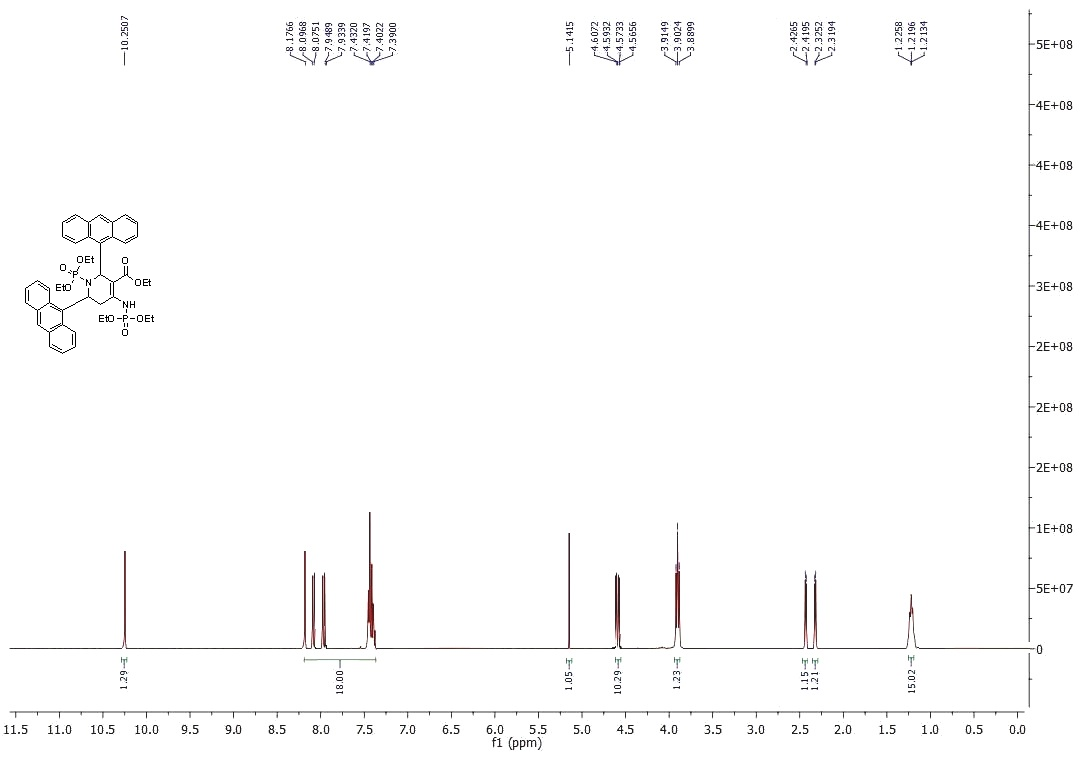
**Figure S 21: 1H - NMR Spectrum of compound 4g**

****

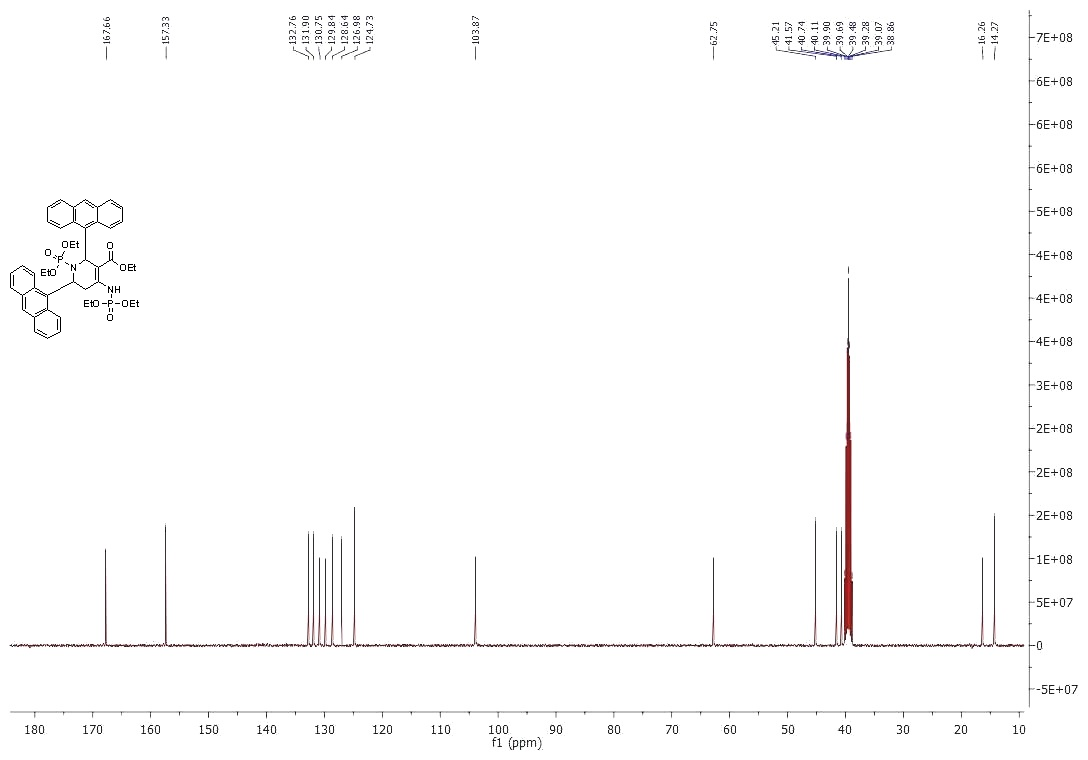
**Figure S 22: 13C - NMR Spectrum of compound 4g**

****

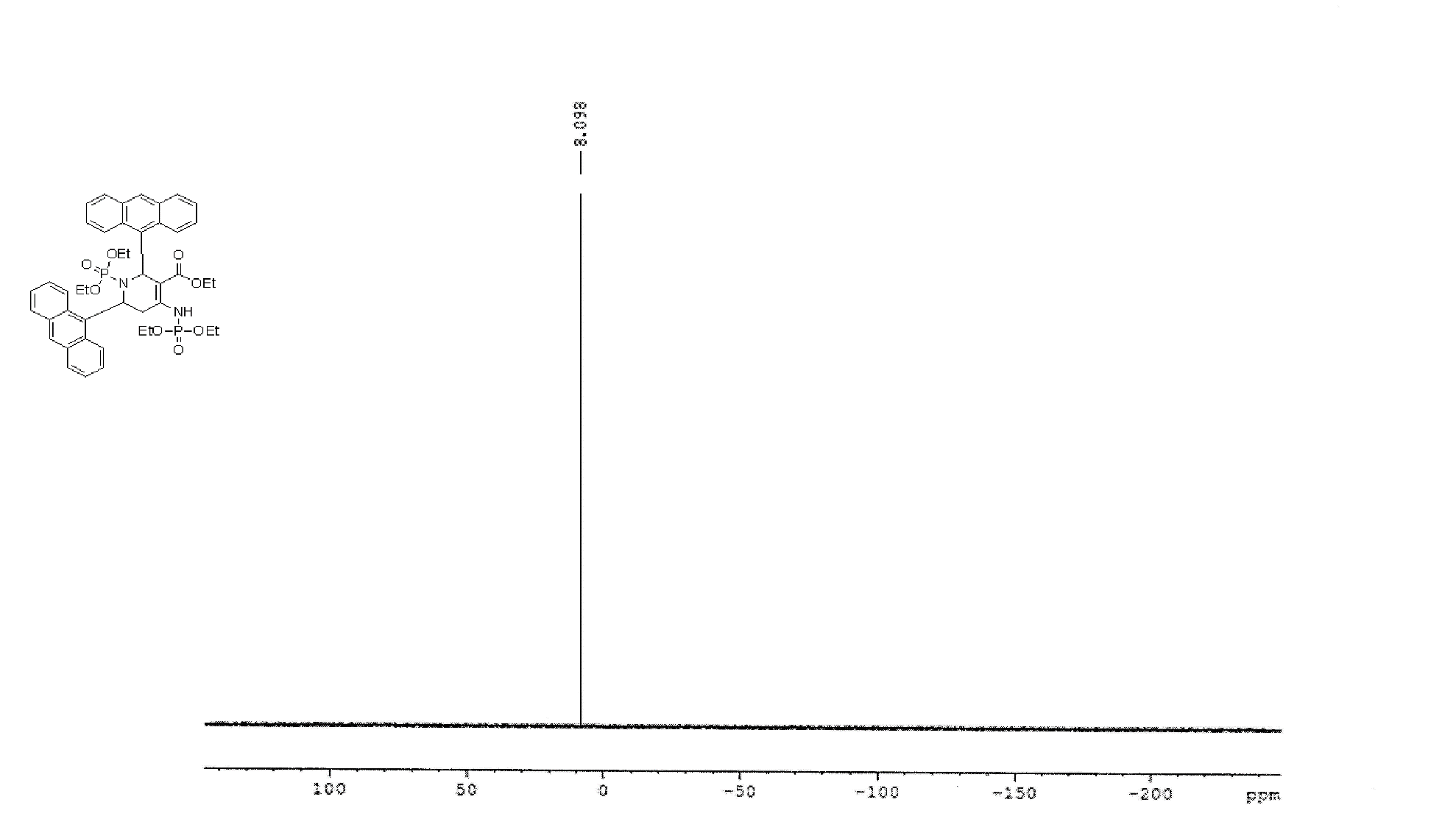
**Figure S 23: 31P - NMR Spectrum of compound 4g**

****

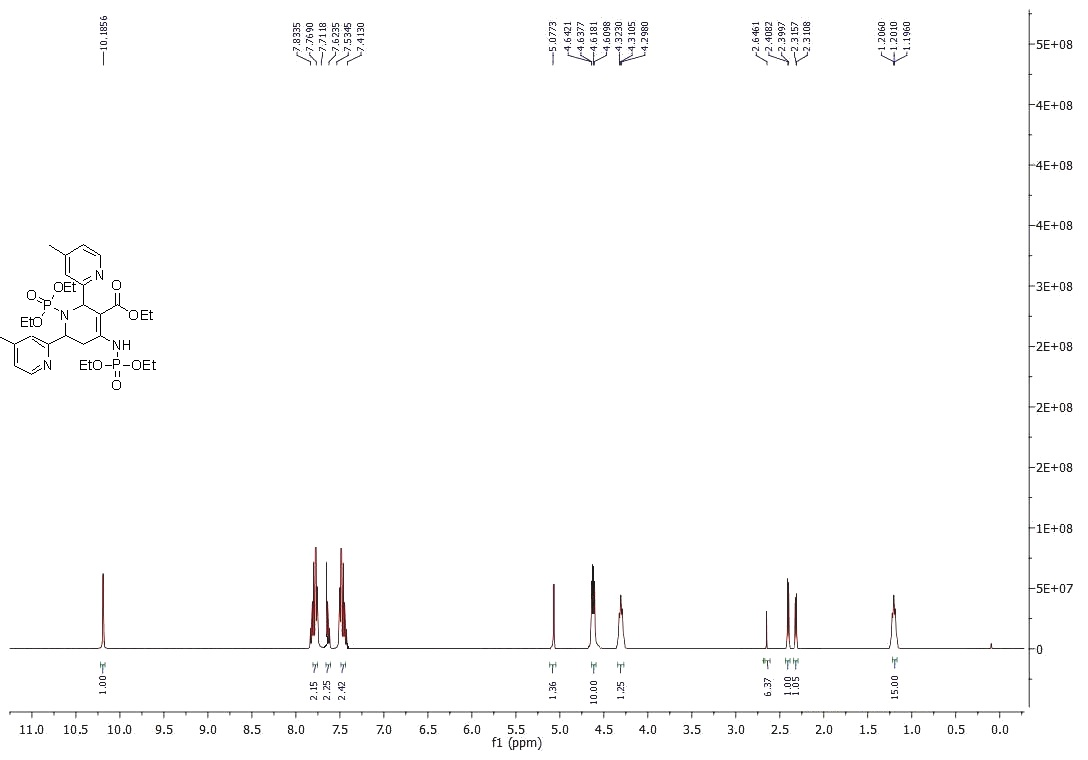
**Figure S 24: 1H - NMR Spectrum of compound 4h**

****

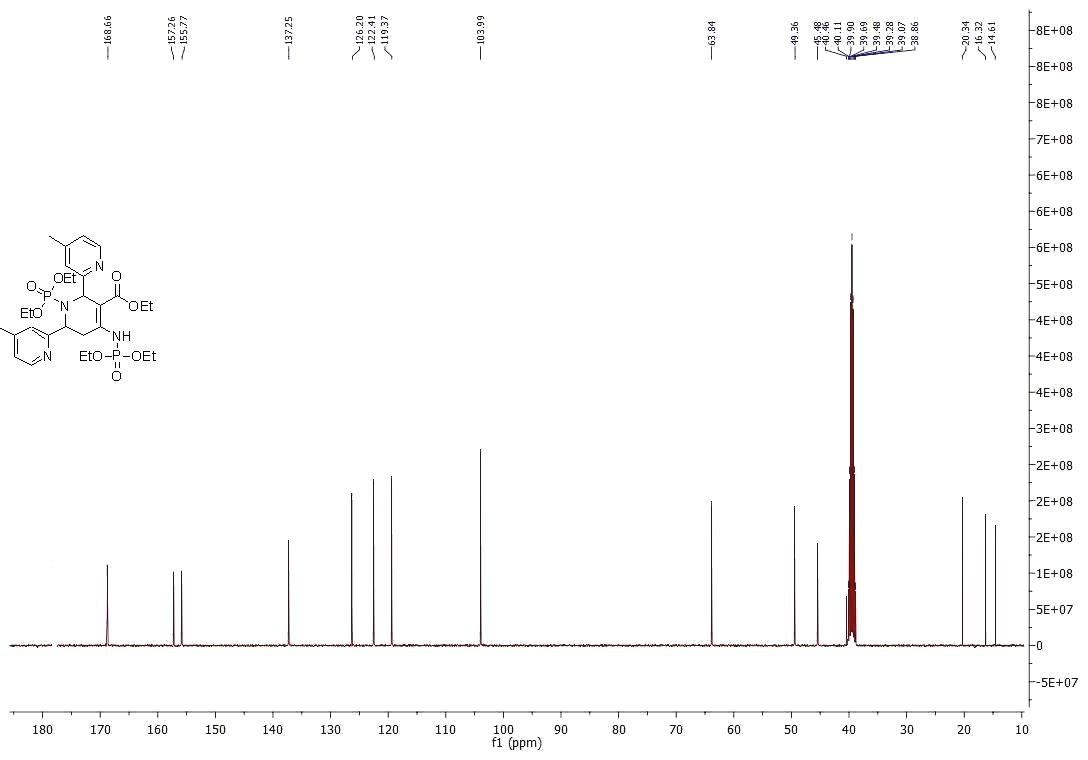
**Figure S 25: 13C - NMR Spectrum of compound 4h**

****

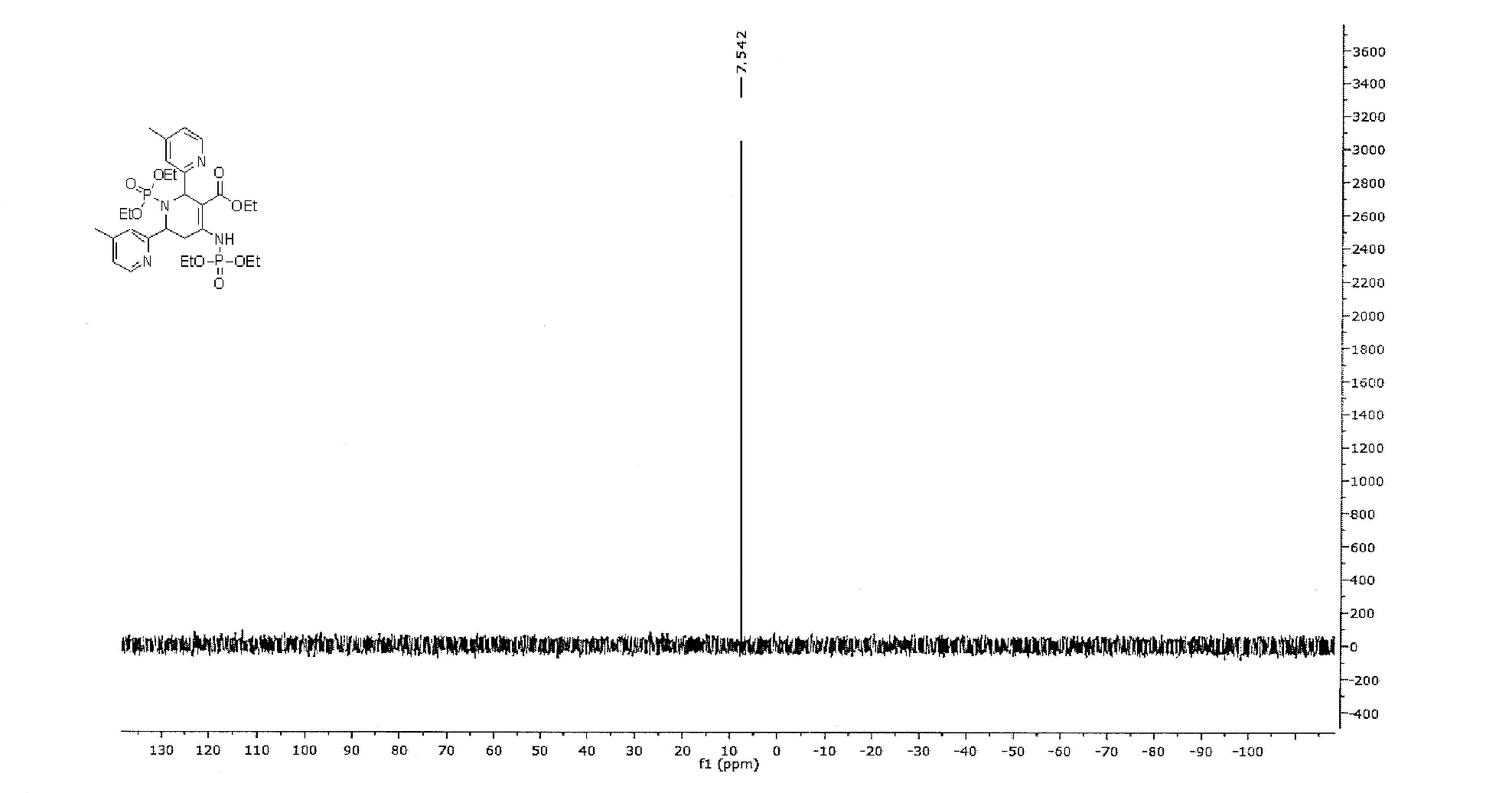
**Figure S 26: 31P - NMR Spectrum of compound 4h**

****

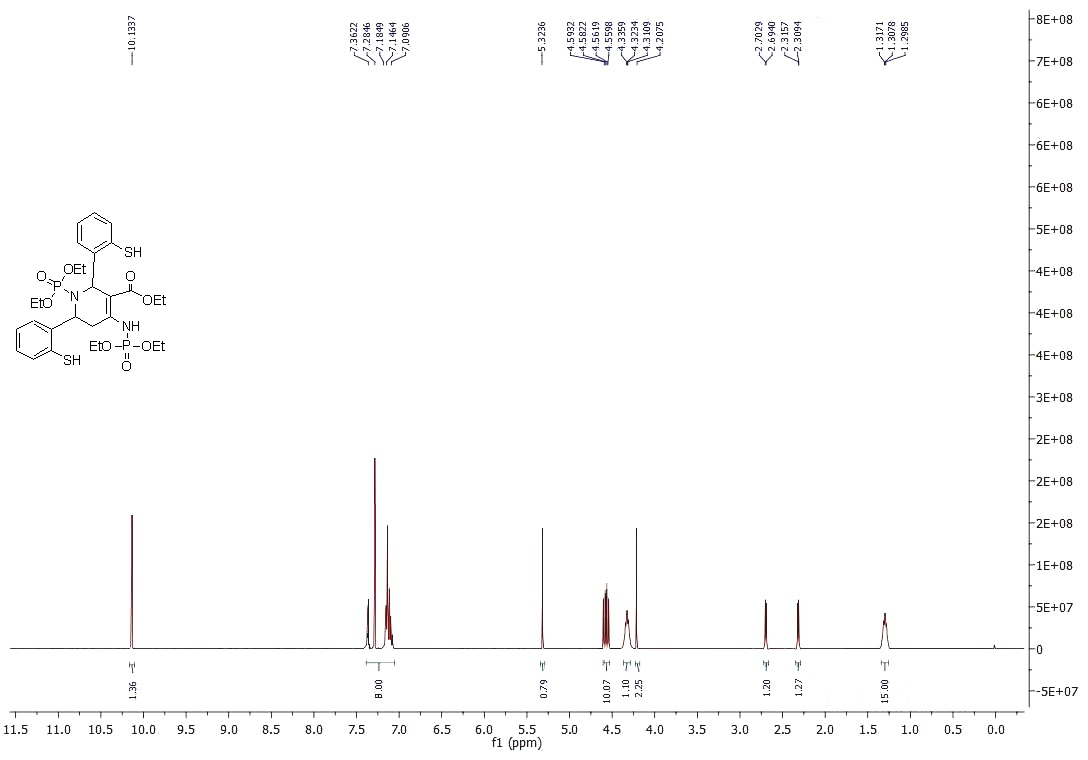
**Figure S 27: 1H - NMR Spectrum of compound 4i**

****

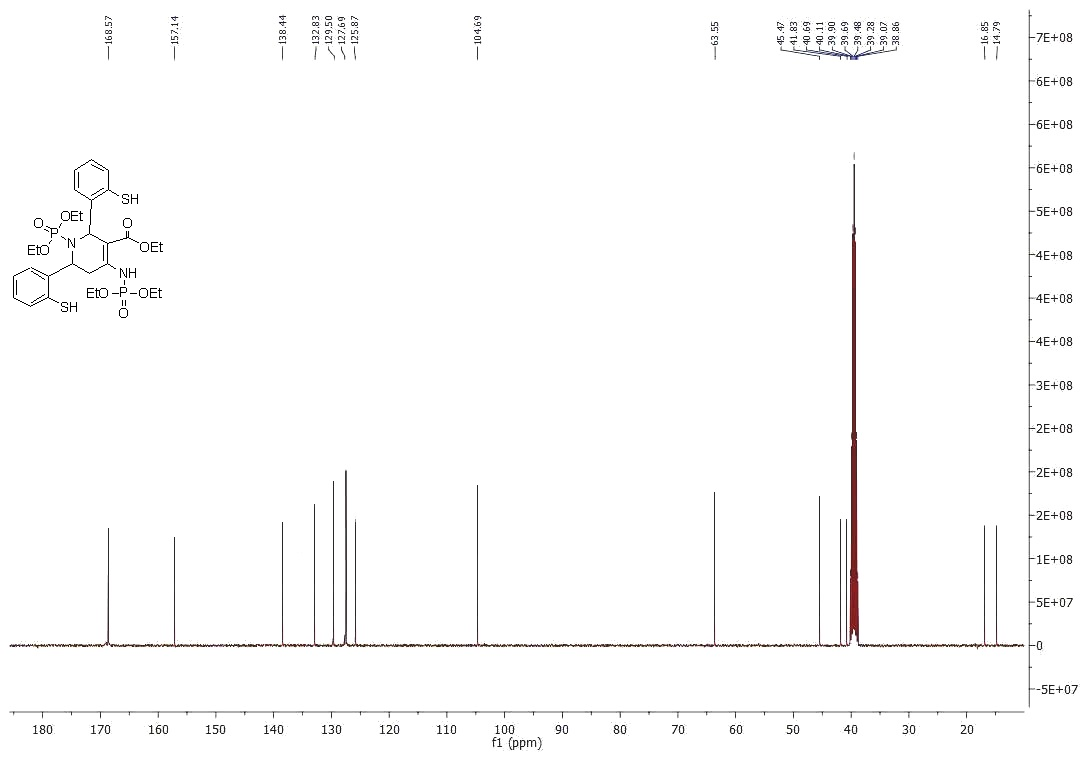
**Figure S 28: 13C - NMR Spectrum of compound 4i**

****

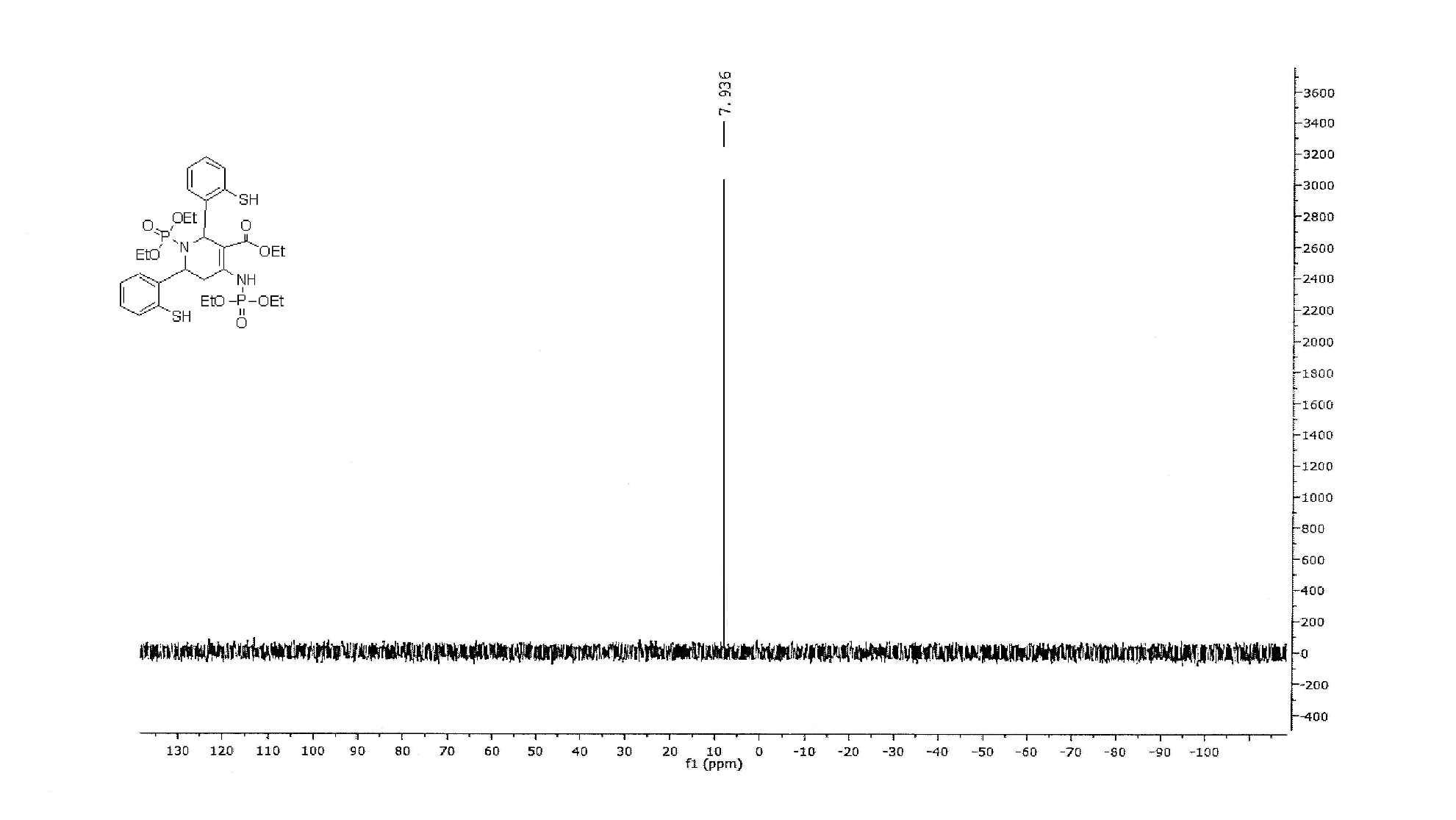
**Figure S 29: 31P - NMR Spectrum of compound 4i**

****

**Figure S 30: 1H - NMR Spectrum of compound 4j**

****

**Figure S 31: 13C - NMR Spectrum of compound 4j**

**Figure S 32: 31P - NMR Spectrum of compound 4j**